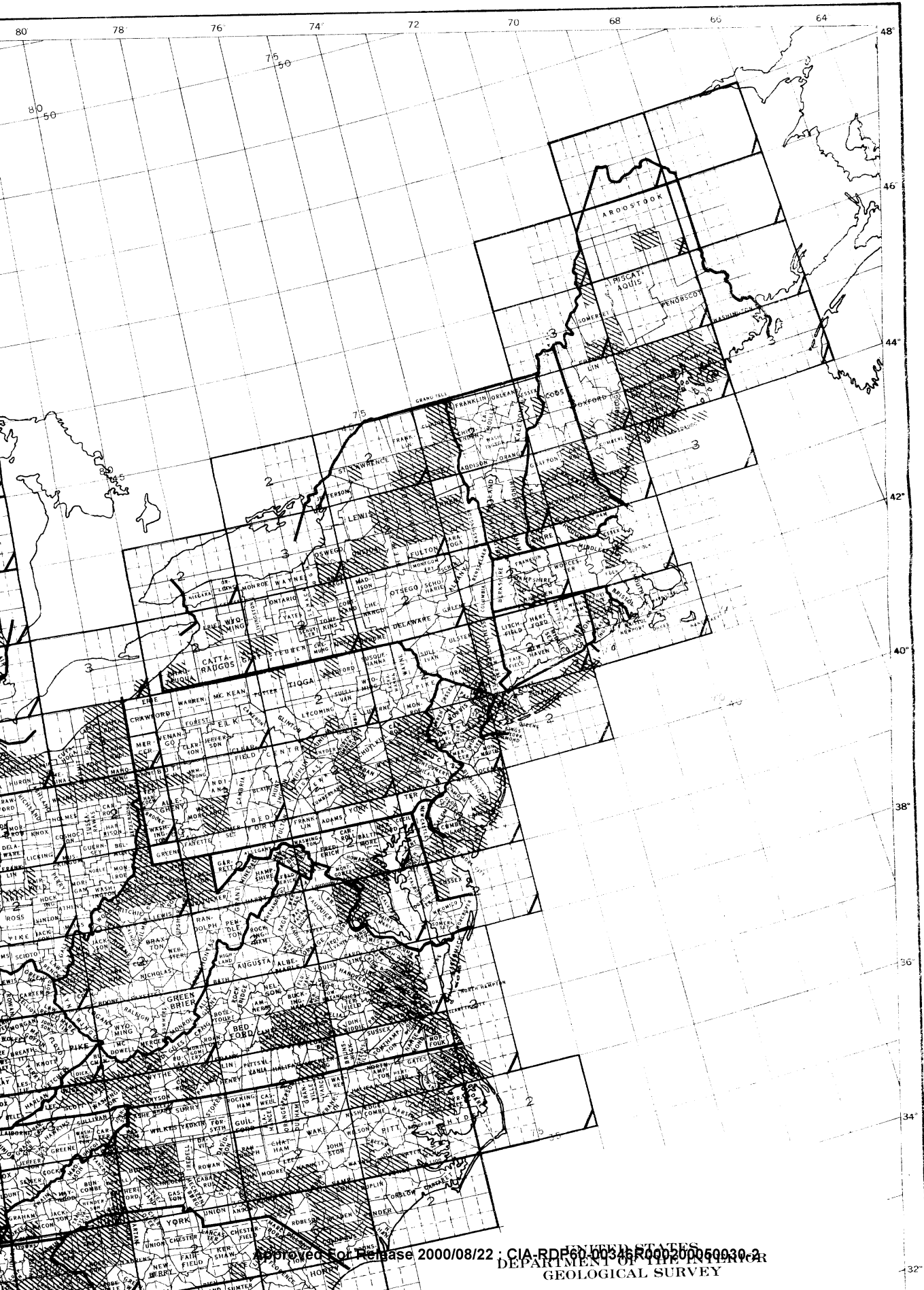


UNITED STATES



STATUS OF TOPOGRAPHIC MAPPING IN THE UNITED STATES JANUARY 1957

This status map shows topographic and planimetric quadrangle maps, produced by the Geological Survey and other Federal Agencies, and published at various scales ranging from 1:24,000 to 1:250,000. These quadrangle maps have been grouped in accordance with Geological Survey standards as indicated. See separate map for the status of topographic mapping in areas outside of continental United States.

The names of published maps are shown on sales indexes issued for each state. Copies of these state indexes and further information concerning current projects, the availability of maps, aerial photographs, geodetic control data, and advance map materials can be obtained from the Map Information Office, U.S. Geological Survey, Washington 25, D. C.

Published
at scales
1"=1 mile
and larger

LEGEND

Published
at scales
smaller than
1"=1 mile

- 1 - Modern maps
- 2 - Maps in need of revision
- 3 - Maps of limited usefulness
- 4 - Maps in need of resurvey

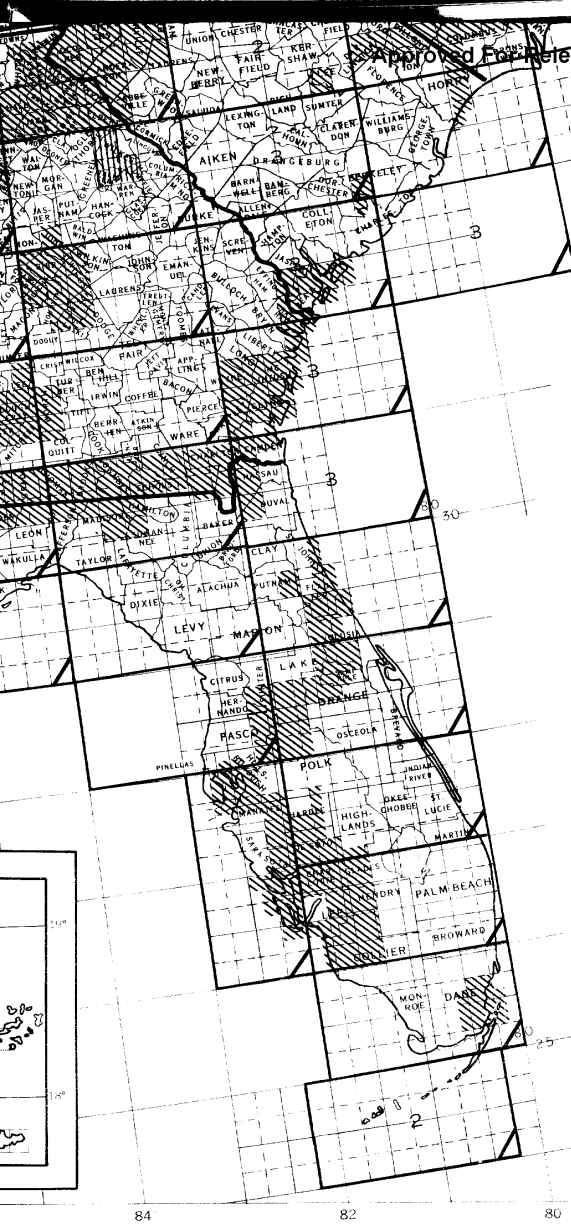
Planimetric maps

Work in progress (new mapping, remapping, and revision)

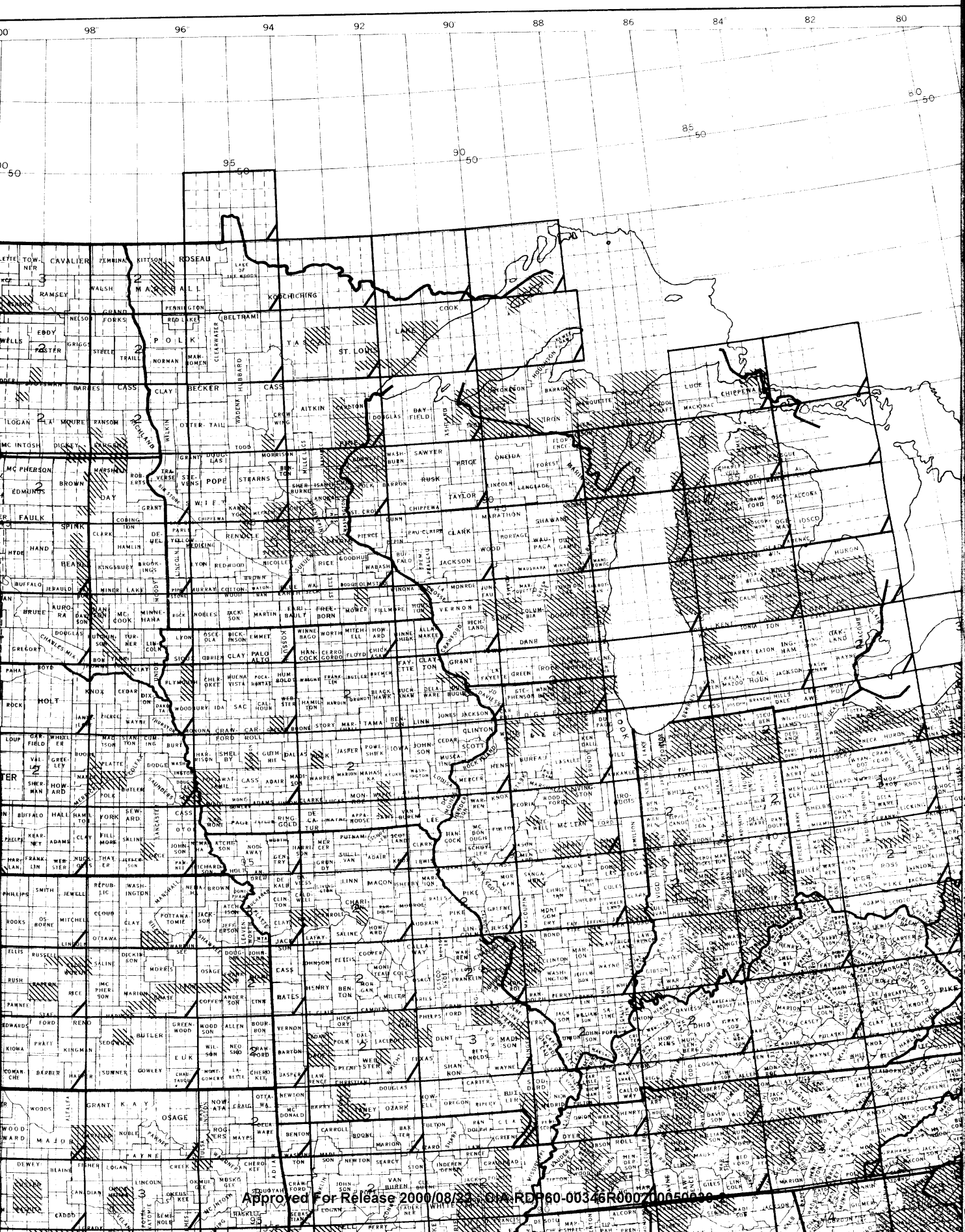
U. S. topographic series published at 1:250,000 scale Numeral indicates map group

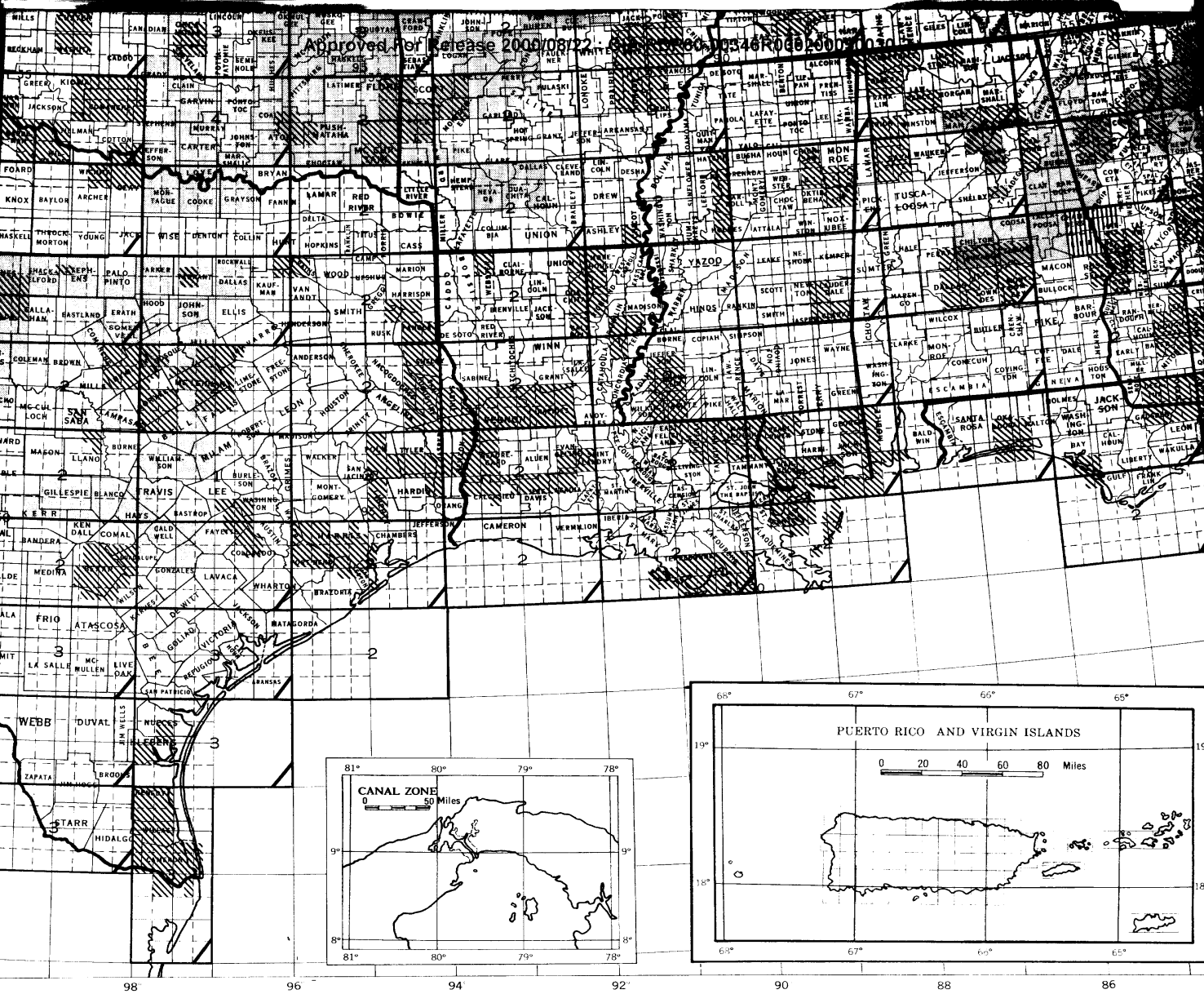
Scale 1:5,000,000
50 0 50 100 150 200 Miles

For more detailed information on current mapping see United States Geological Survey Quarterly Progress of Operations Map.



INTERIOR - GEOLOGICAL SURVEY, WASHINGTON, D. C.
MP 3273-1 M 114107

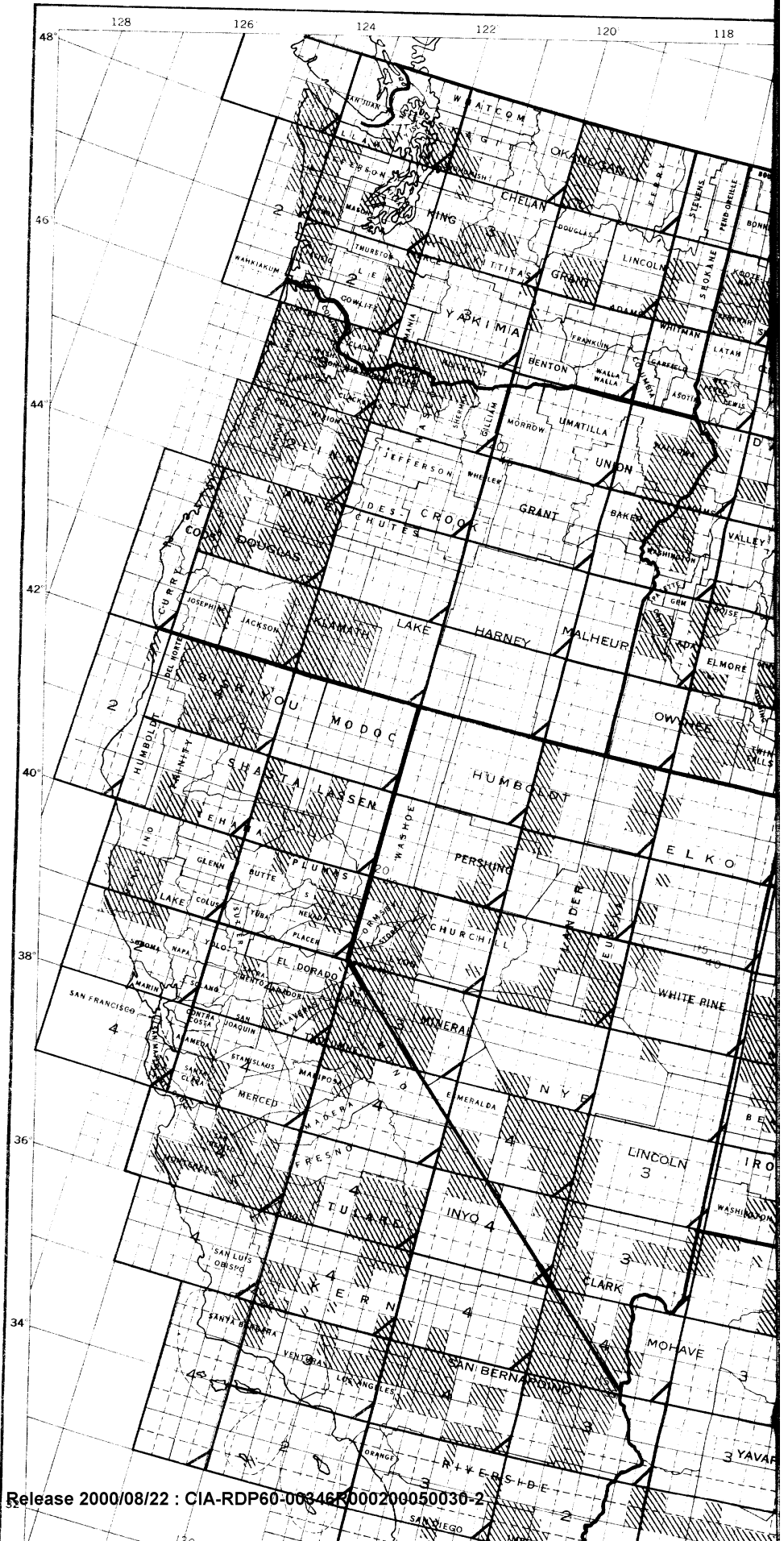


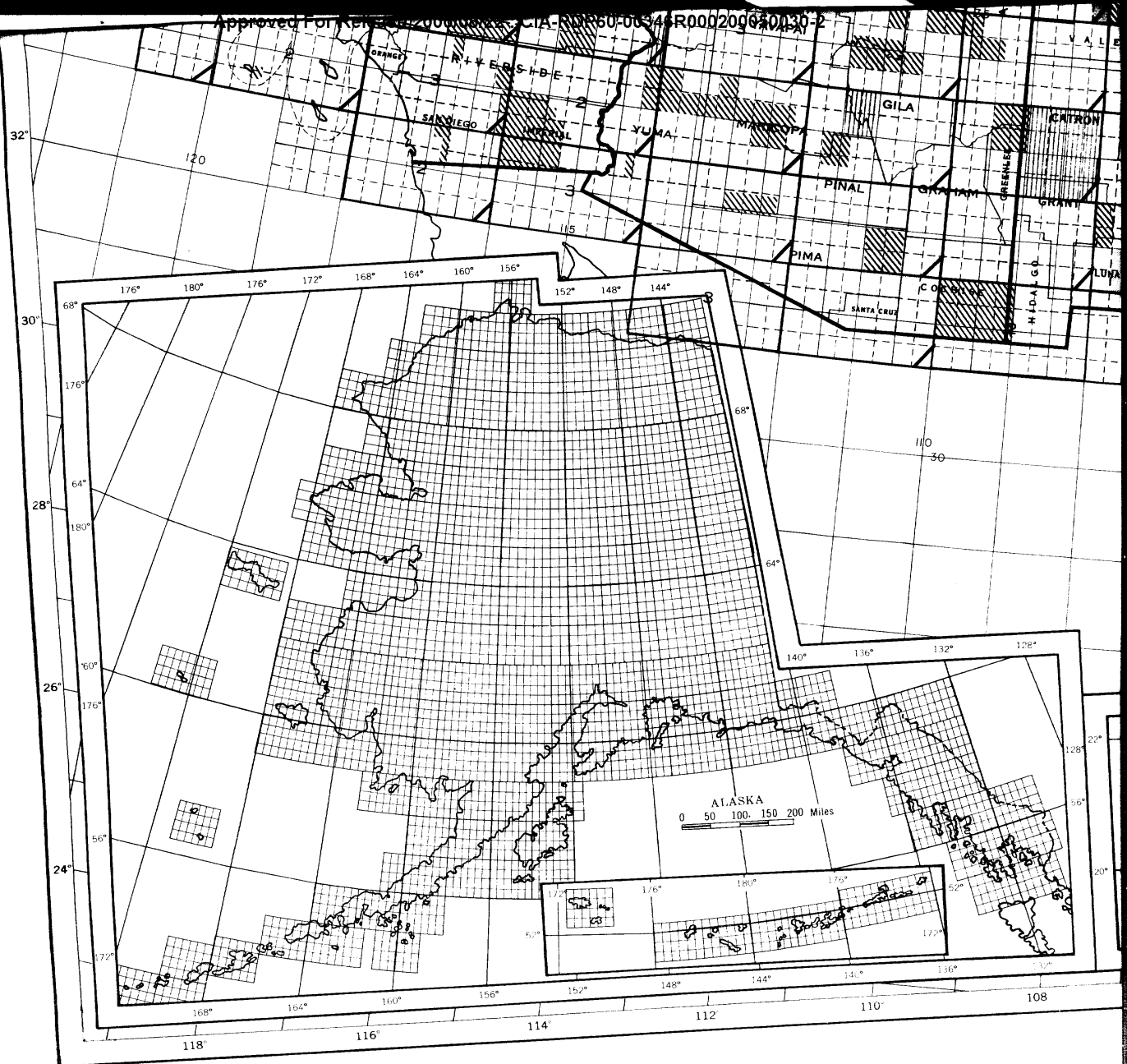




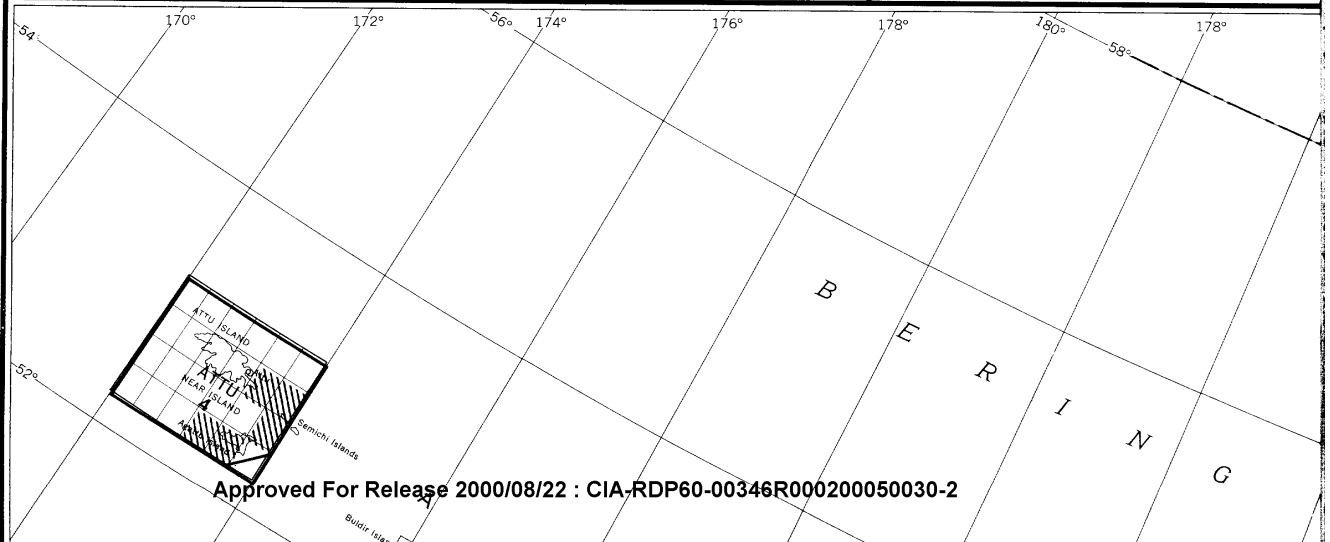
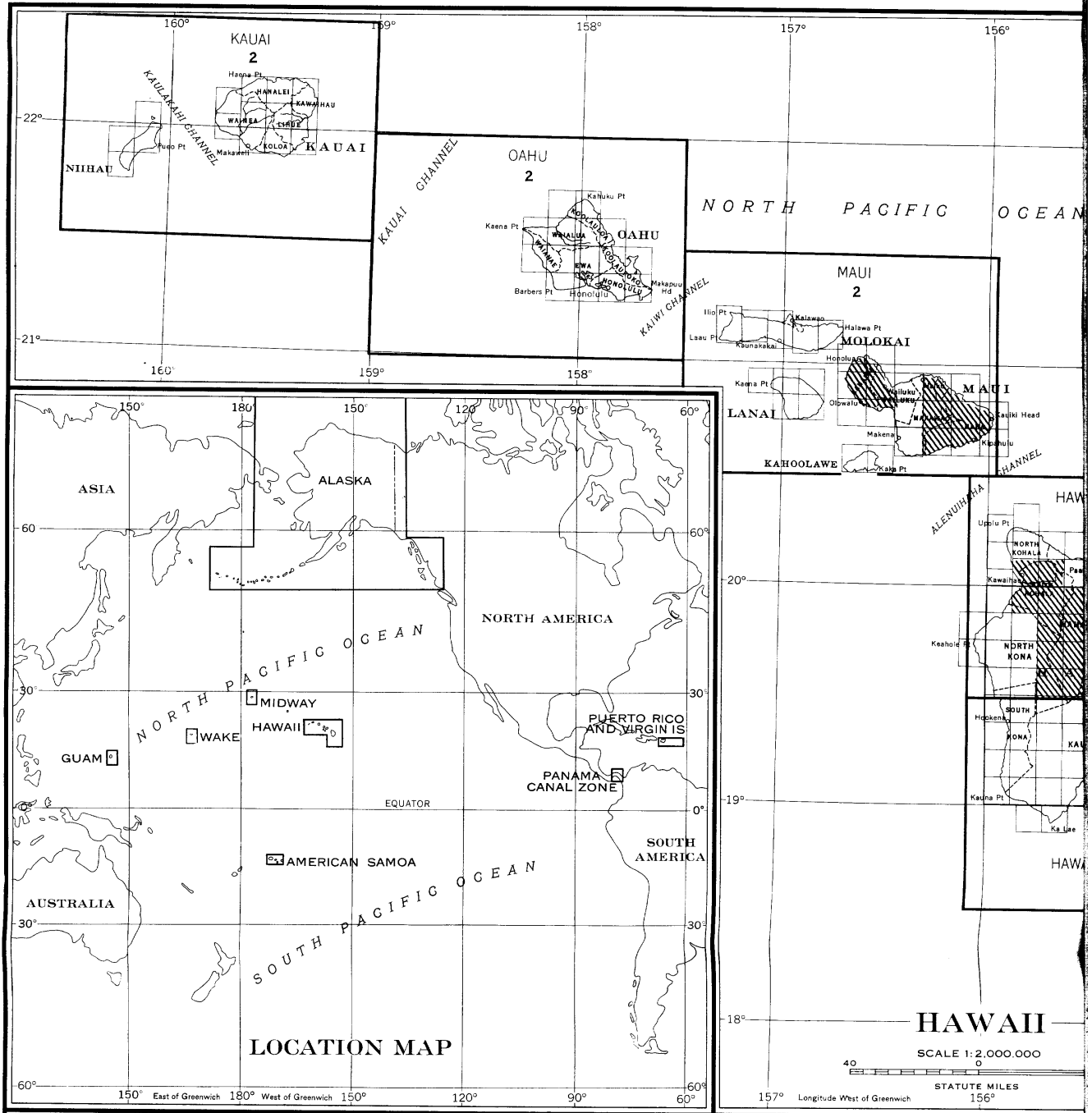


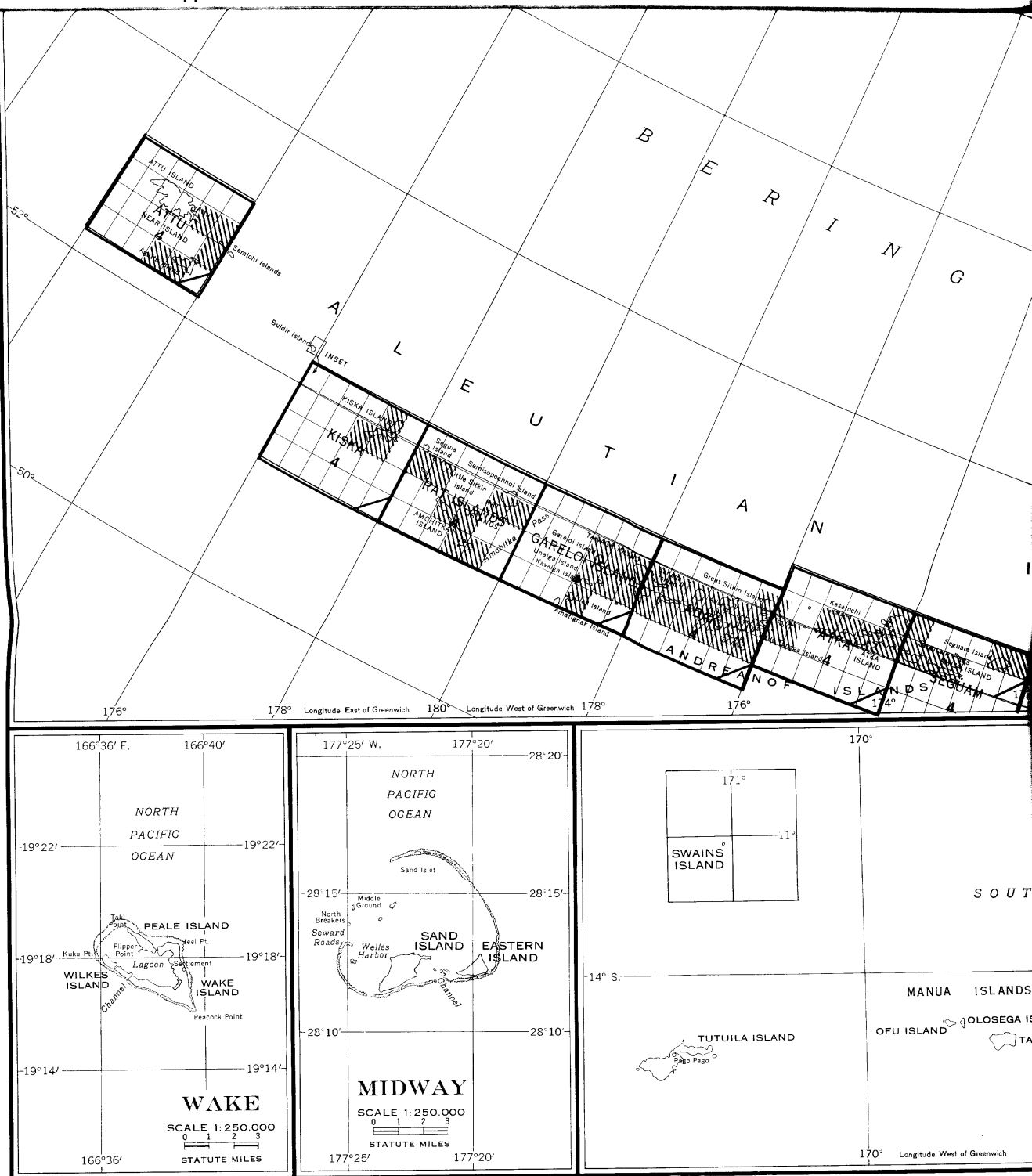
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

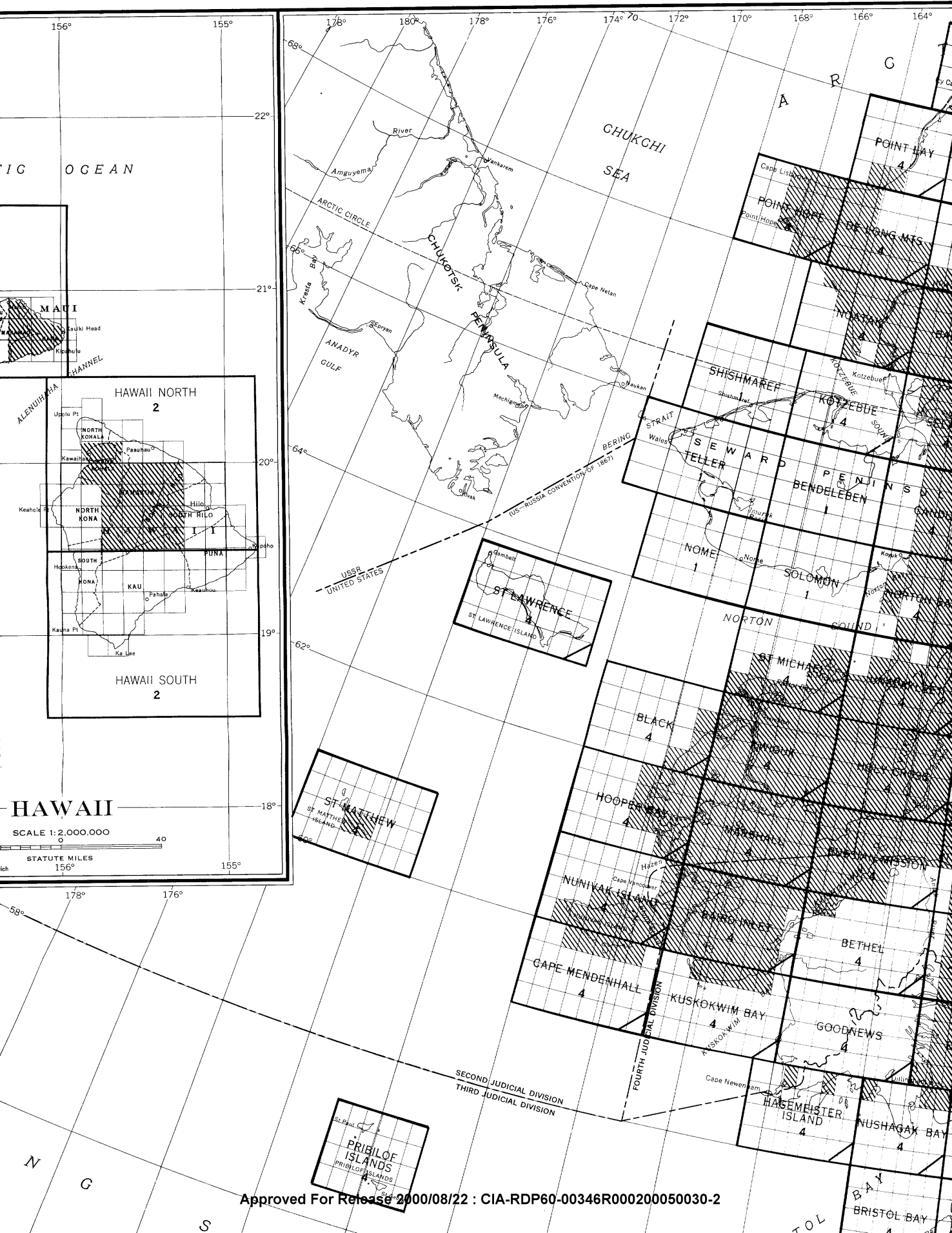


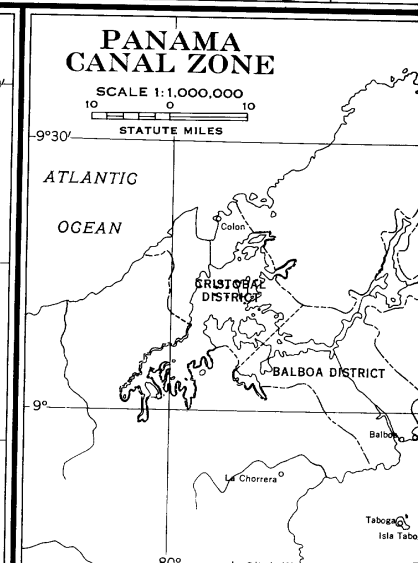
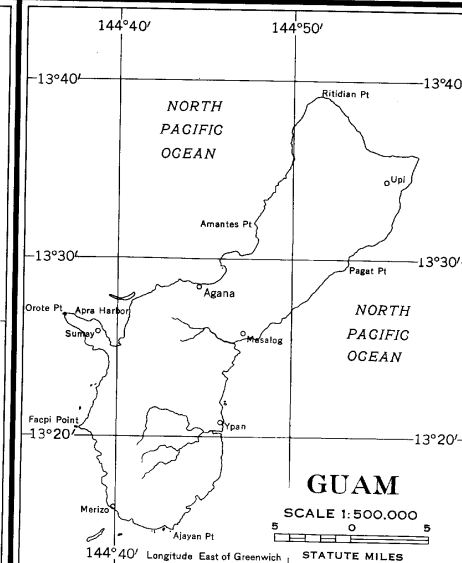
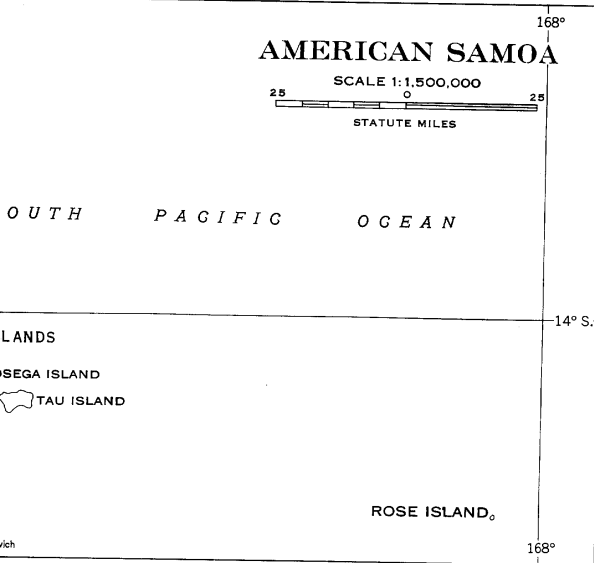
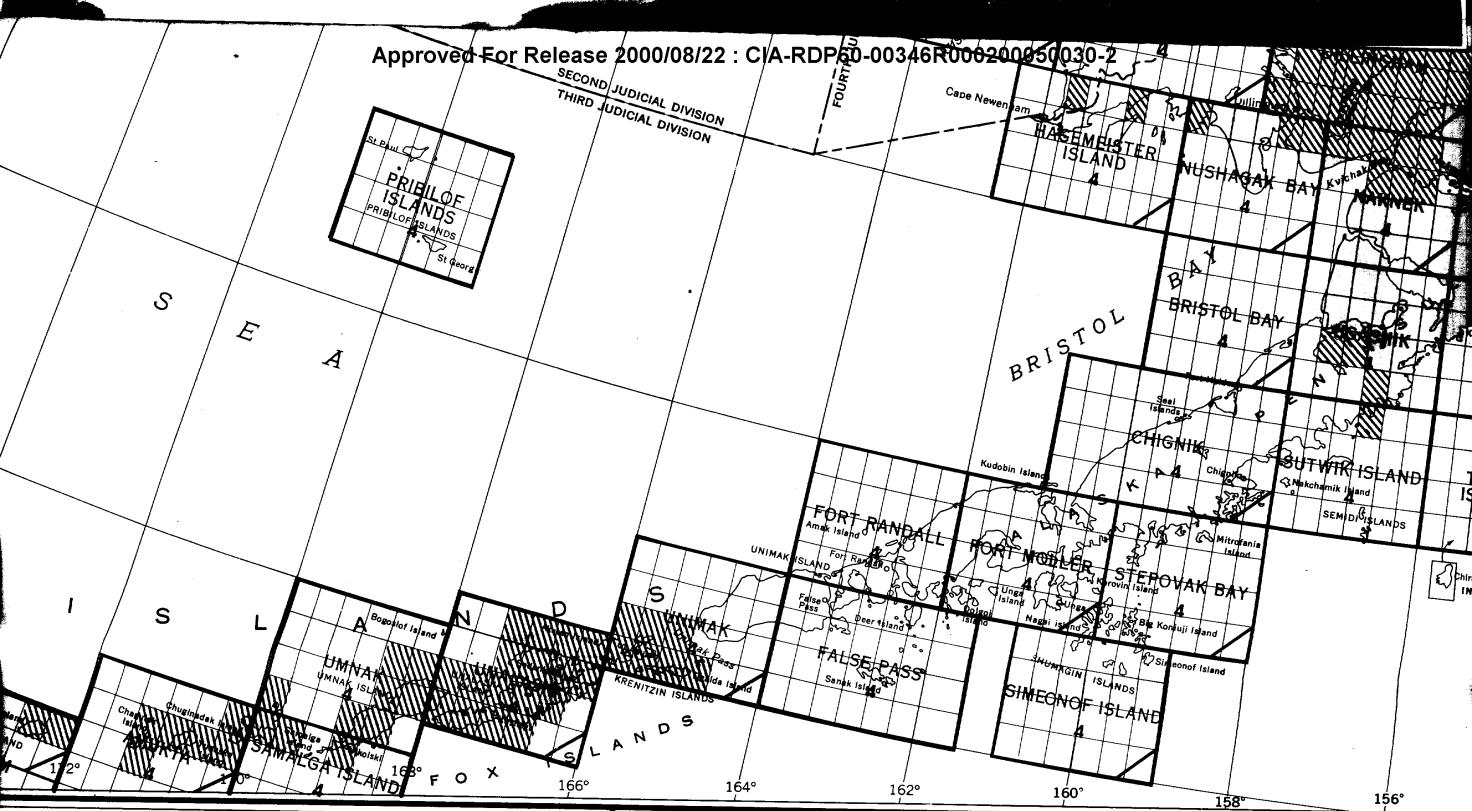


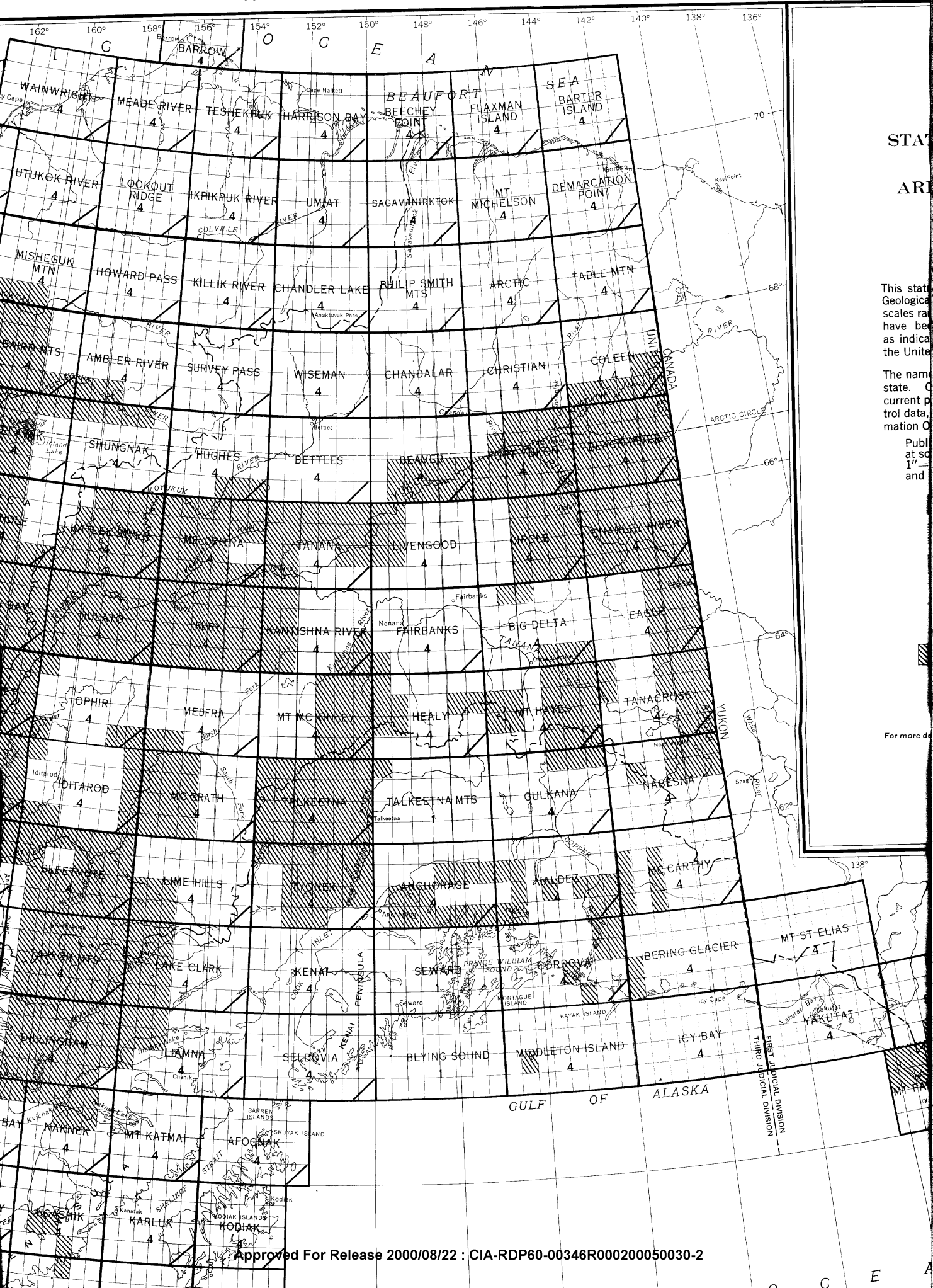
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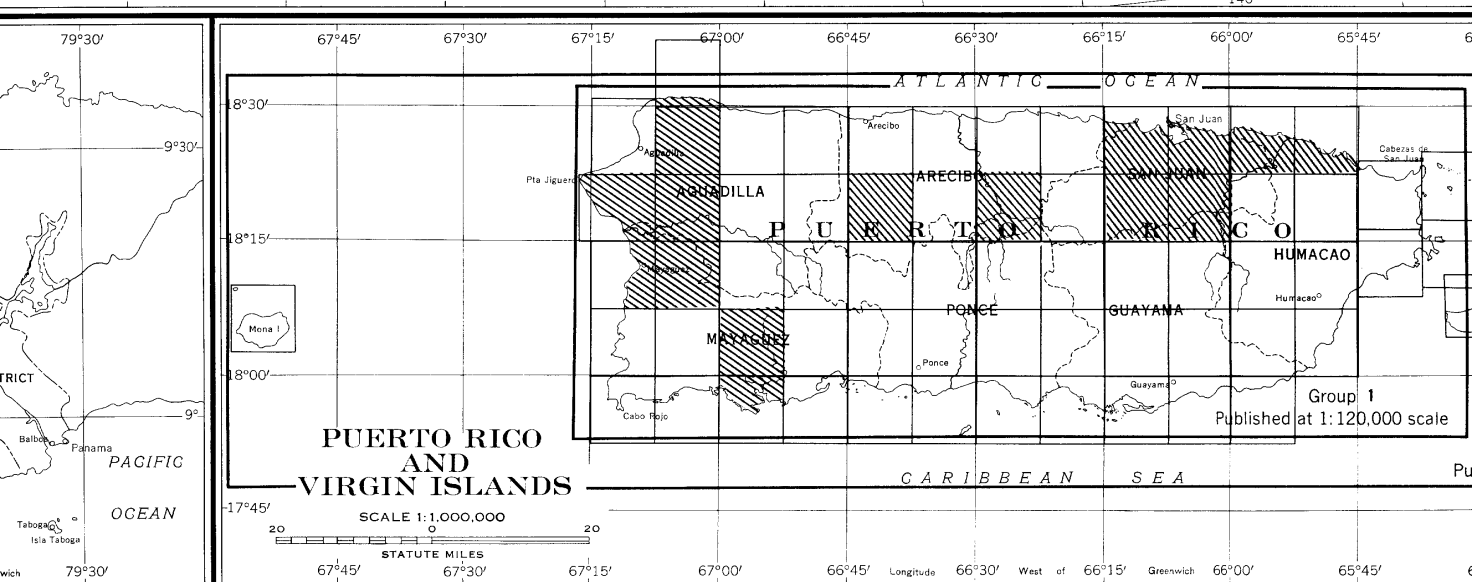
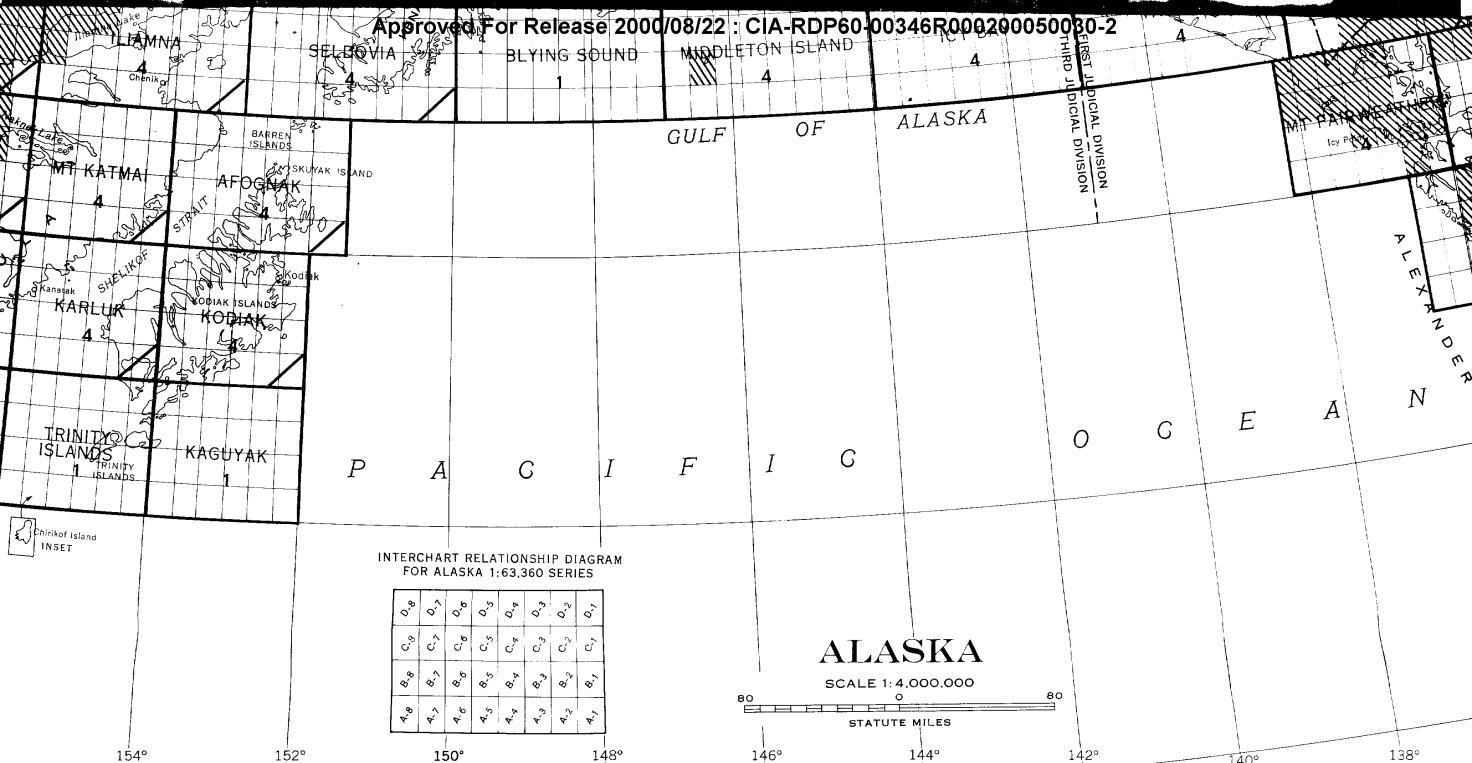
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JANUARY 1957

The names of published maps are shown on sales indexes issued for each state. Copies of these state indexes and further information concerning current projects, the availability of maps, aerial photographs, geodetic control data, and advance map materials can be obtained from the Map Information Office, U. S. Geological Survey, Washington 25, D. C.

LEGEND

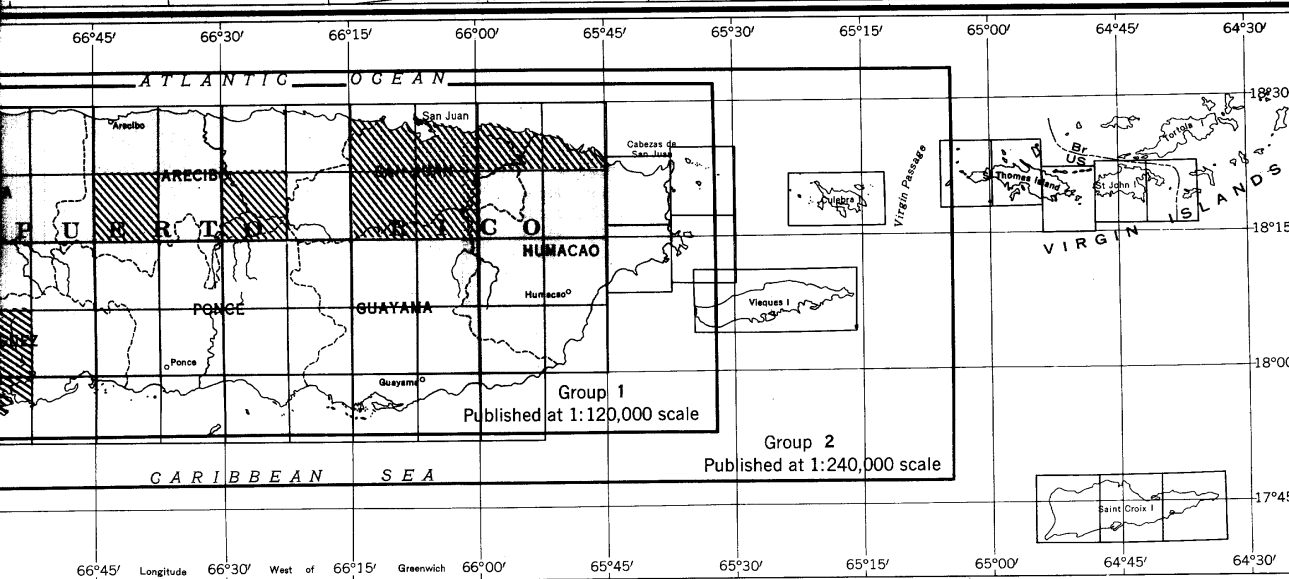
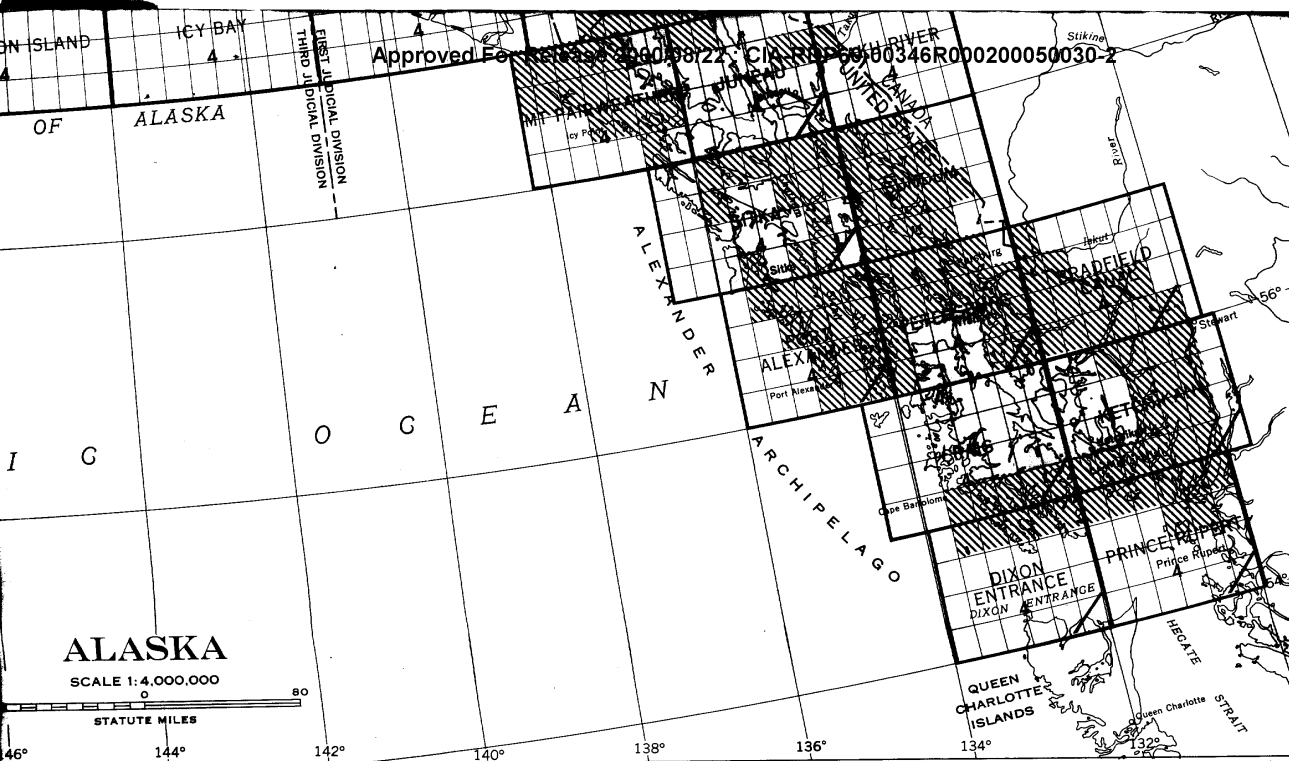
Published
at scales
smaller than
1"=1 mile

- Work in progress (new mapping, remapping, and revision)

U.S. and Alaska topographic series
published at 1:250,000 scale. Nu-
meral indicates map group.

For more detailed information on current mapping see United States Geological Survey Quarterly Progress of Operations Map

FIRST JUDICIAL DIVISION
THIRD JUDICIAL DIVISION



Copy No. 13

GEOGRAPHIC INTELLIGENCE REPORT

PROBABLE UNITED STATES AND USSR GEODETIC
ACCURACIES BETWEEN ICBM LAUNCH
SITES AND TARGETS

CIA/RR-GR-166

November 1957

CENTRAL INTELLIGENCE AGENCY
Office of Research and Reports

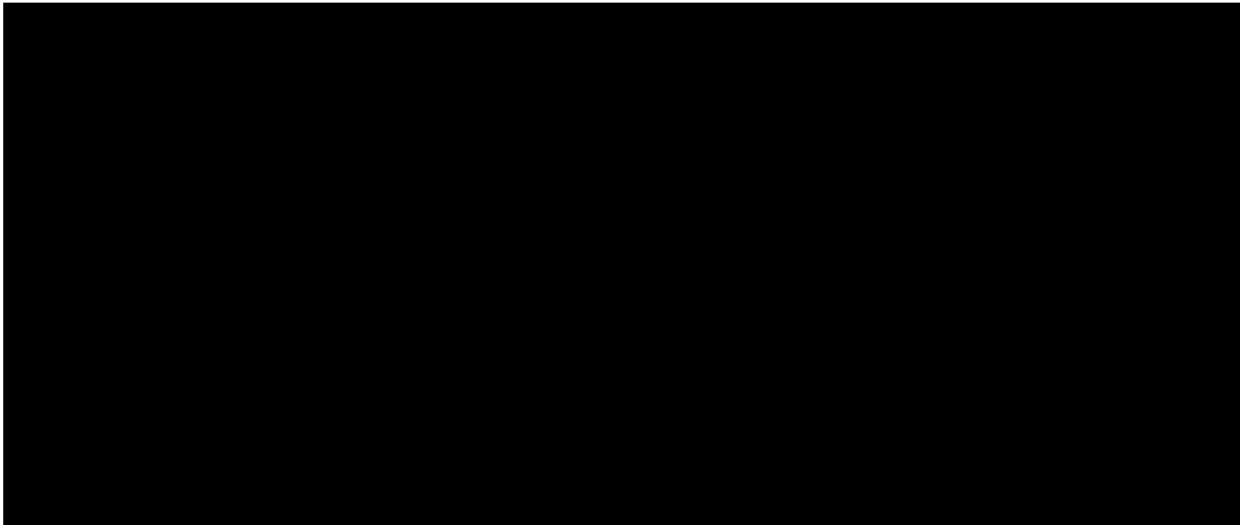
W A R N I N G

This material contains information affecting the National Defense of the United States within the meaning of the espionage laws, Title 18, USC, Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

CONTENTS

	Page
Introduction	1

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Maps

	Following Page
U.S.S.R. Index of Largest Scale Available Topographic Maps	8
Status of Topographic Mapping in Areas Outside the Continental United States, January 1957	in folder
Areas Covered by Published Topographic Maps, June 1957	in folder

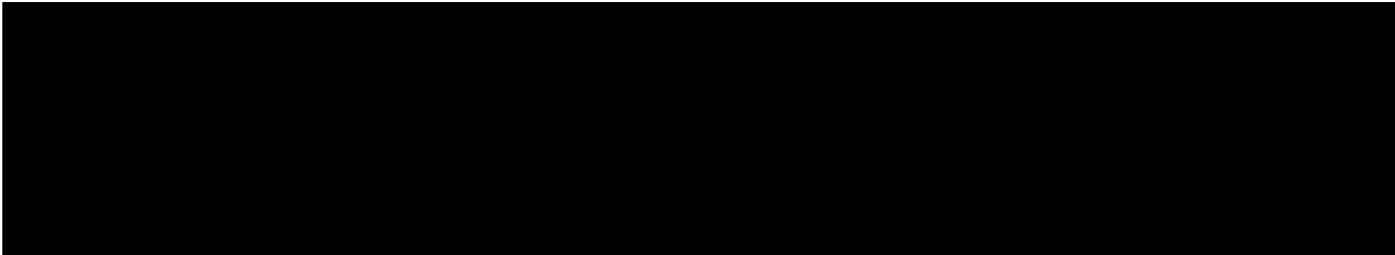
PROBABLE UNITED STATES AND USSR GEODETIC
ACCURACIES BETWEEN ICBM LAUNCH
SITES AND TARGETS

Introduction

In planning launch sites for intercontinental ballistic missiles in either the US or the USSR, it is evident that the launch sites of one nation will be prime targets of the other in case of open hostilities. The facilities of a launch site may be "soft," that is, spread out on the surface of the earth; or they may be "hard," that is, built underground to minimize surface exposure and vulnerability. The vulnerability of any launch site depends upon its degree of hardness and upon the enemy's capability for hitting the selected target, which is usually expressed as circular probable error (CEP).

It is important to distinguish between the purely operational errors (random) of the missile and the geodetic errors (systematic) which are inherent in connecting the launch and target points on the earth's surface. The geodetic error, as considered here, also includes the effects of gravity anomalies upon the missile during flight and the cartographic error which arises when site positions are plotted on maps. This report is concerned with geodetic errors only. No attempt is made to assess the

25X1506 or in future covert collection of intelligence on targets in the USSR.



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5. USSR Topographic Map Coverage

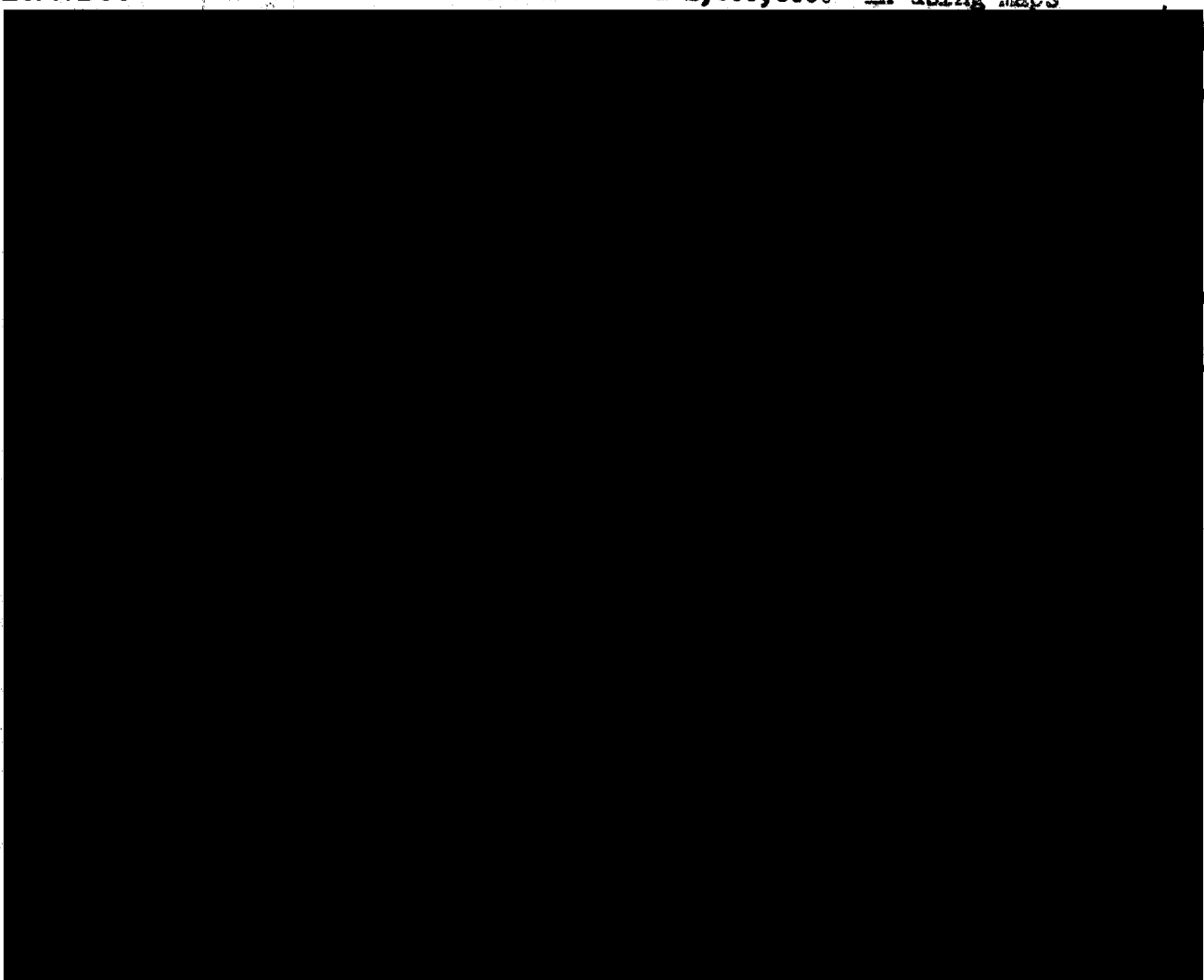
Since the readjustment of the Soviet horizontal control net in 1942-45, the Soviets have concentrated upon completing their topographic map series at 1:100,000. Soviet writers have stated positively that this series is now completed for the entire area of the USSR. Knowing the magnitude of the Soviet geodetic and cartographic organization, we are inclined to accept this statement of accomplishment. The number of sheets must total over 25,000. The accomplishment is really fabulous in view of the enormous size of the USSR. The astounding but embarrassing fact is that we in the US have ^{none} ~~NONE~~ of these basic Soviet topographic maps at 1:100,000.

US holdings of Soviet maps at various scales are shown on a small map accompanying this report. In effect, the US holdings all predate

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the Soviet readjustment of 1942-45 and are therefore based upon the Pulkovo 1932 Datum or older datums. Some of the old maps can be improved geodetically by shifting the geographic coordinate lines as indicated on a recently published Soviet key map that relates the Pulkovo 1932 and the 1942 datums. US holdings, however, are all of World War-II or older vintage and therefore do not show adequately present-day cultural and topographic features. For a vast area of north central Siberia, the only widespread coverage available is at 1:1,000,000. In using maps

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In the US, pertinent facts about our launch sites (to judge by the current newspapers) commonly receive publicity in the press. The Soviets

will have no difficulty in determining the approximate locations of ICBM sites in the US simply by reading the newspapers. Even if the US should attempt to curtail further publicity concerning planned sites, it is doubtful that secrecy could be maintained because of the multiplicity of operations involved during construction. A Soviet agent could be expected to plot the critical points associated with a launch site on one of our maps with an error not much greater than the usual cartographic error of the map. Should the US launch area be small -- on the order of 9 or 16 square miles -- the plotting of critical points could probably be even more precise. At the current stage of planning, it might be advisable to consider giving publicity to only the crudest sort of sketches of US launch sites.

25X1X4 The US, in contrast, can hope for no such kindly assistance from the Soviet press concerning the locations of ICBM sites in the USSR.



25X1X4 A very wide range of error must be expected in whatever intelligence we obtain because of the unpredictability of the agent's success in the field. The data could yield plotting accuracy within the limits of cartographic error, or the position plotted could be in error by miles. Probably many Soviet launch sites will remain undetected prior to open hostilities. Aerial photography will be of little help without maps and geodetic control for the photographed area. So great is the range of the intelligence-collection error, in so far as it concerns US efforts against Soviet targets, that no reliable estimate of its magnitude can be given here.

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